

T1-T2

FIGURE 1

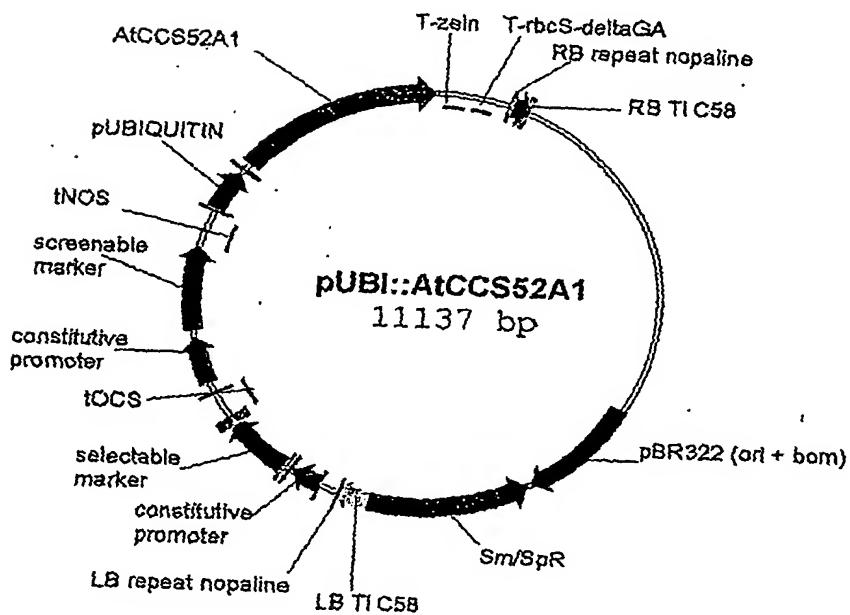


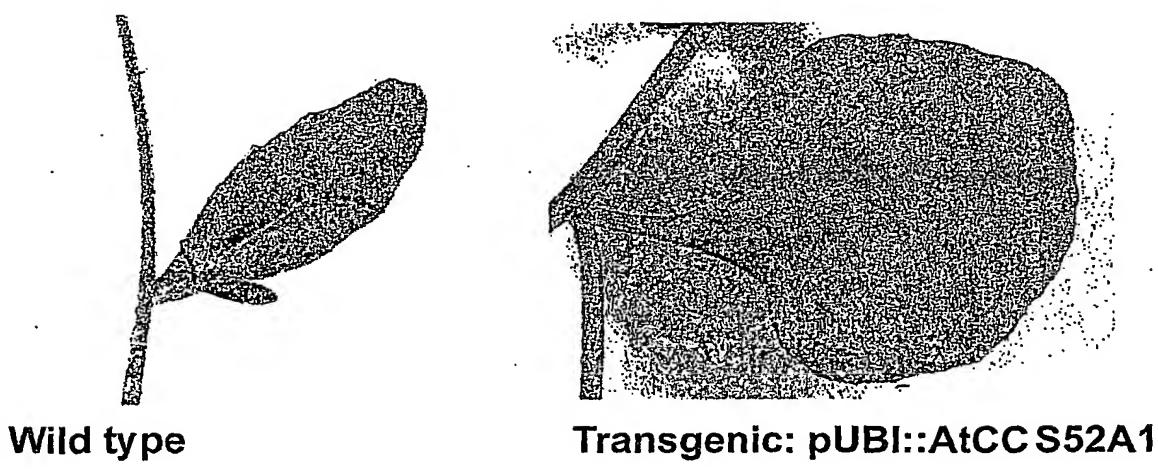
FIGURE 2

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Wild type

Transgenic: pUBI::AtCCS52A1

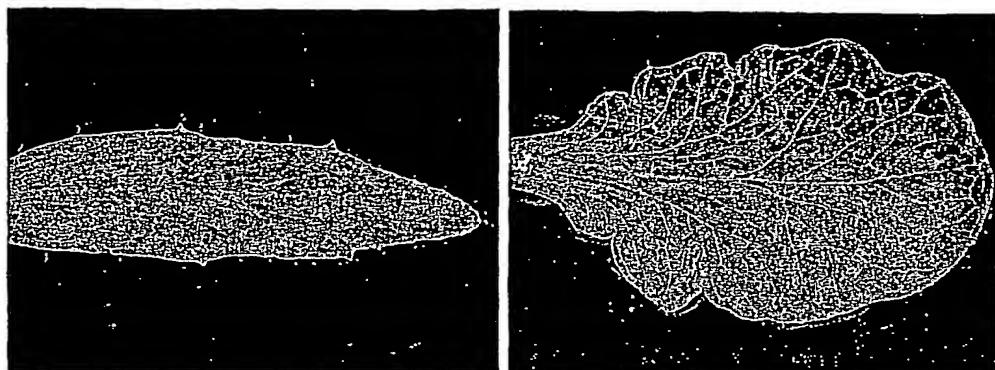
FIGURE 3

Wild type

Transgenic: pUBI::AtCCS52A1

FIGURE 4

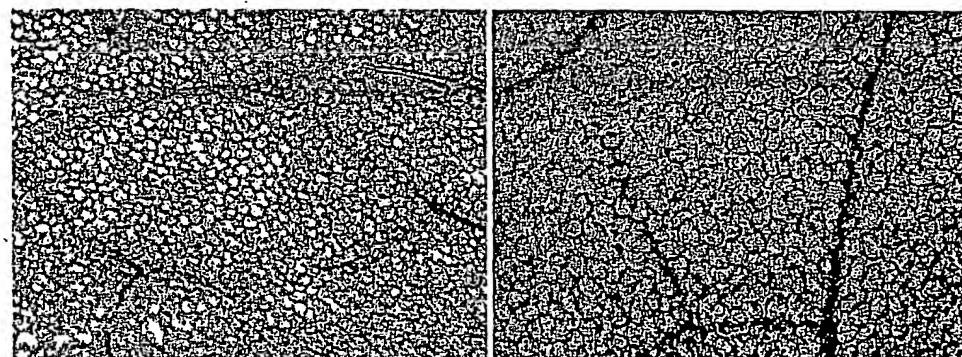
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Wild type

Transgenic: pUBI::AtCCS52A1

FIGURE 5



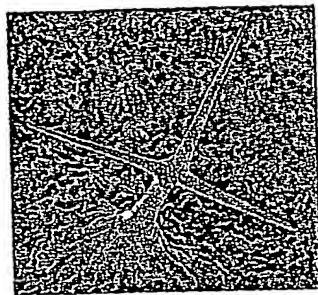
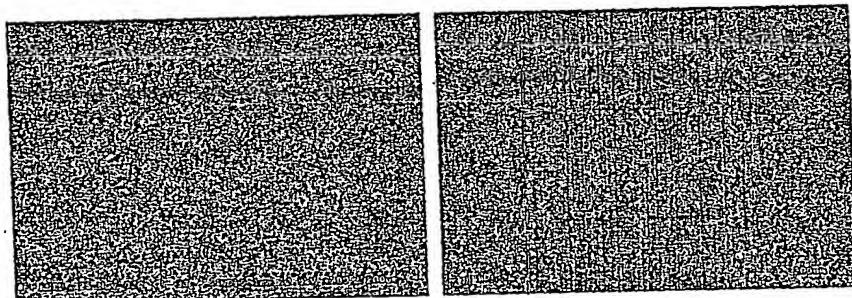
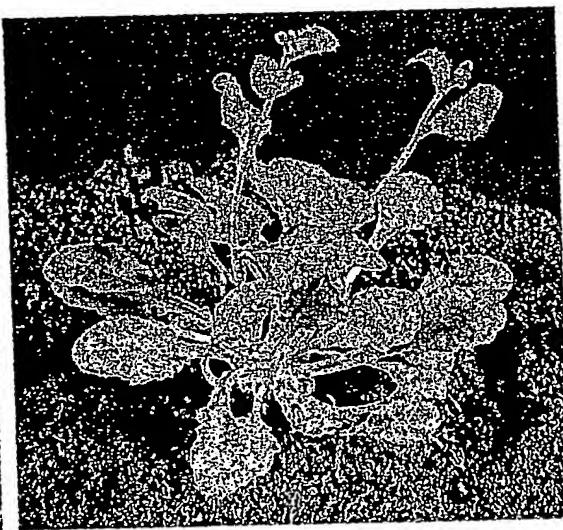
Wild type

Transgenic: pUBI::AtCCS52A1

FIGURE 6

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A Wild type**B Transgenic: pUBI::AtCCS52A1****FIGURE 7****Wild type****Transgenic: p2S2::AtCCS52A1****FIGURE 8****BEST AVAILABLE COPY**

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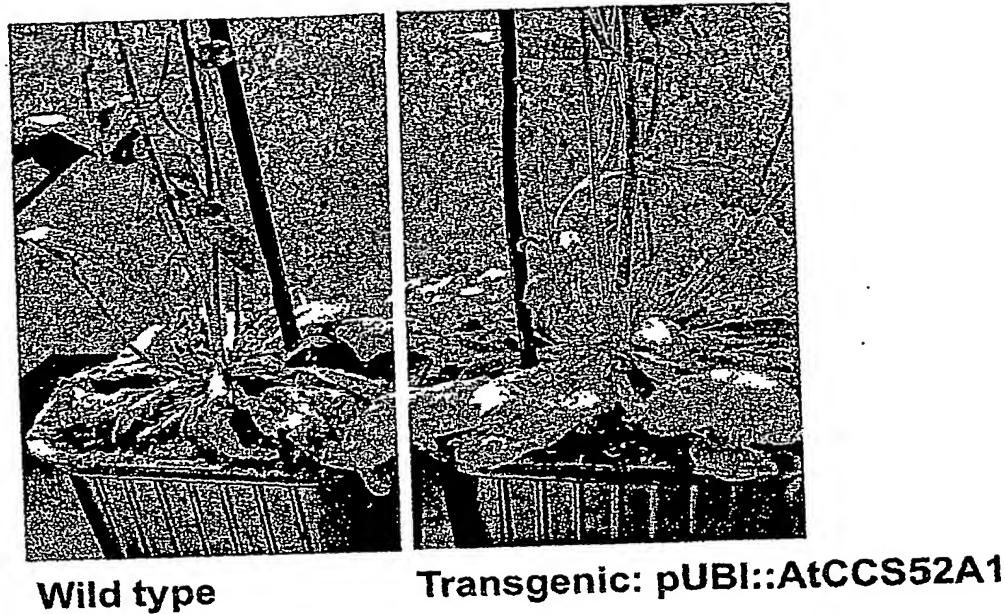


FIGURE 9

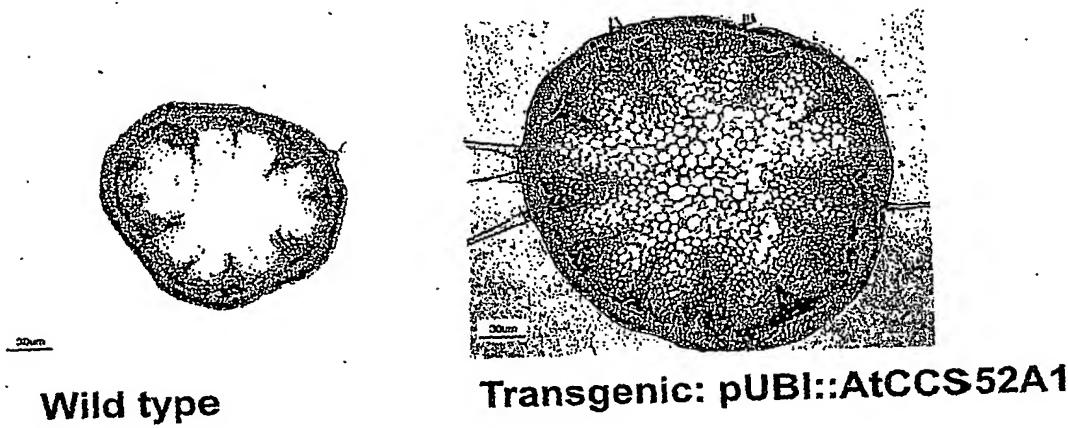
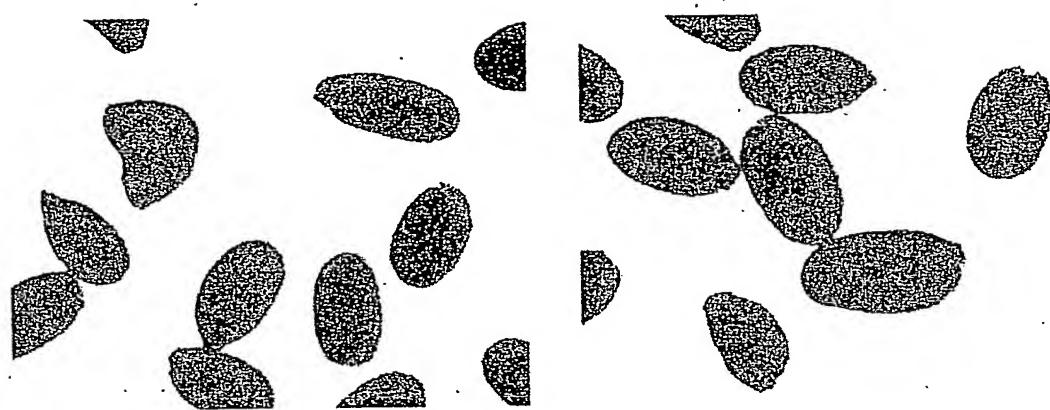


FIGURE 10

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Wild type

Transgenic: pUBI::AtCCS52A1

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FIGURE 11

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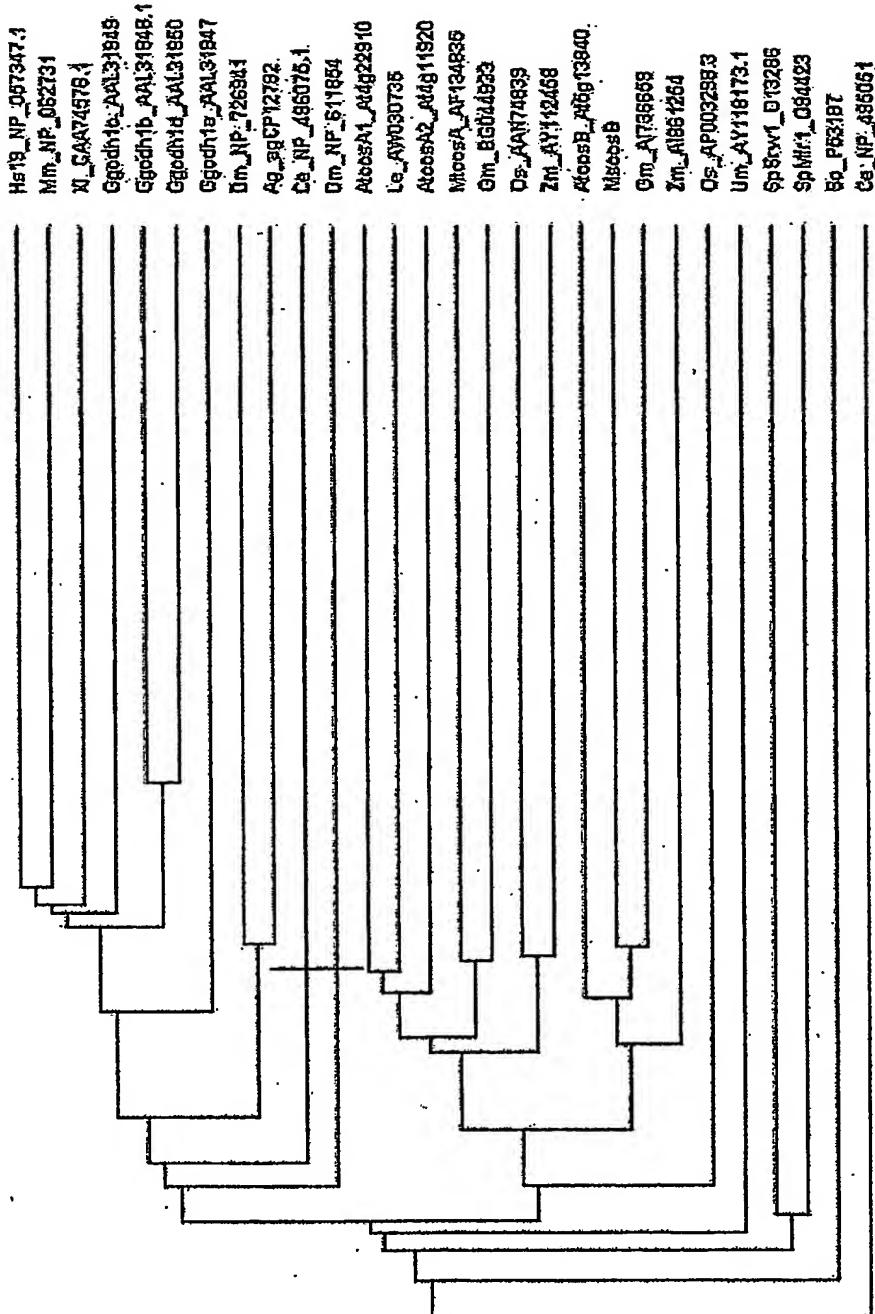


FIGURE 12

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CCS52 motifs

Gene	C-box	Motif 1
AtCCS52A1 (At4g22910)	62 DRFIPSR 68	70 GSNFALFDL 78
AtCCS52A2 (At4g11920)	53 DRFIPSR 59	61 GSNFALFDL 69
AtCCS52B (At5g13840)	46 DRFIPCR 52	54 SSRLHAFDL 62
Rice CCS52A (AK070642)	52 DRFIPSR 58	60 GSNLALFDL 68
Consensus	DRFIPXR	XXXXXXFDL
SEQ ID NO	SEQ ID NO 16	SEQ ID NO 7

Motif 2	Motif 3	Motif 4
88 EDGAGSYATLLRAAMFG 104	117 SSSRNIFRFKTETHRSL 133	207 SKVTKL 211
81 EDGAGSYASLLKTAFLG 97	111 SPSGNIFRFKTEQRSL 127	198 SKVTKL 202
73 EGGNEAYSRLLKSELFG 89	111 SPCTNMLRFKTDRSNS 129	203 SKVTKL 207
93 TPASSPYCALLRAALFG 109	137 PATGNIFRFKAEVPRNA 152	228 SKVTKL 232
XXXXXXXXXXLXXXXFG	XXXXXXXREKX _(2 or 4) RXX	SKVTKL
SEQ ID NO 8	SEQ ID NO 9	SEQ ID NO 10

Motif 5	Motif 6
289 DHVSKLAGHKS 300	329 HSTQPVLKYSEH 340
283 DHVSKLKGHKS 293	330 HSTQPVLRFCEH 341
288 DFVSKLVGHKS 298	335 HSQQPILKLTEH 346
313 DYISRLAGHKS 323	352 HSAHPVLKYTEH 363
DXXSXLXGHKS	HSXXPXLXXXEH
SEQ ID NO 11	SEQ ID NO 12

Motif 7	Motif 8	Motif 9
371 WNTTTTNTHLSSIDT 384	403 LYLA VSPDGQTIVT 416	471 EIGSSFFGRRTTIR 483
364 WNTTTTNTHLNCVDT 377	426 LYLA VSPDGQTIVT 439	463 EIGALSFGRTTIR 476
369 WNTTNGNQLNSIDT 382	431 LYLATSPDGQTIVT 444	469 DTGLWSLGLTQIR 481
394 WNTTTTNMHLNCVDT 107	456 LYLA ISPDGQTIVT 469	495 SIGATSFVRSYIR 508
WNTTXXXXLXXXDT	LYLAXSPDGQTIVT	XXGXXXXXXXXXIR
SEQ ID NO 13	SEQ ID NO 14	SEQ ID NO 15

FIGURE 13

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SEQ ID NO 1: *Arabidopsis thaliana* CCS52A1 cDNA, At4g22910

ATGGAAGAAGAAGATCCTACAGCAAGCAATGTGATAACGAATTCGAATTCTCATCTATGAG
 AAACCTATGCCGGCGATGAATACTCCGGTGGTTCACTTGAGTCACGAATCAATCGATTAA
 TCAATGCTAATCAATCTCAATCACCATCACCATCATCAACTATCAAGGTCTATATACTCTGAT
 AGATTATCCCCAGTAGATCCGGATCCAATTTCGCTCTTTCGATCTATCTCCTTCTCCTAG
 TAAAGATGGTAAGGAAGATGGAGCTGGCTTACGCTACTCTGTTGCGCGGCGATGTTG
 GTCCTGAGACGCCGGAGAAGAGAGATATTACTGGGTTTCTTCCAGGAATATTTTAGG
 TTTAACGCGAGACTCATCGGTCTTGAATTCTGTTTCTCCTTGGTGTGATGATGATT
 TCCTGGTGTCTCATAGTGGCCTGTTAAAGCTCCAGGAAAGTGCCTGCGATGCCGTATA
 AGATTCTGATCTCGTTGACTTAGATCTTGGTCTCTGAGGGTCTAGAATTGAGTCTGAGGTATTGGATGCACCGGC
 CTTGCAAGATGATTTATCTGAATCTGTGATTGGTCTGCACAAAATGTTCTAGCAGTGG
 GACTAGGAACTGTGTATTTATGGAATGCTTGTAGCAGCAAGGTTACTAAGTTATGTGAT
 CTCGGAGCTGAGGATAGTGTGCTCAGTGGGTTGGCGTTACGTGGAACTCATCTGGCTGT
 TGGAACTAGTACCGGGAAAGTTCAGATATGGGATGCGTCACGCTGCAAGAGAACAAAGAACAA
 TGGAAGGTATCGTCTAACAGGTTGGAGCCCTGGCATGGGTTATCGGTTCTGCATCTGGT
 AGCAGAGACAAGAGTATTCTCAGAGAGACATAAGGTGTCAGAACAGATCATGTCAGTAAATT
 GGCAGGTATAAATCTGAGGTATGCGGACTCAAGTGGCTTATGACAACAGAGAGCTAGCAT
 CTGGTGGAAACGACAATAGGCTTTGTATGGAACCAACATTCAACACAAACGGTTTGAAA
 TATAGTGAACACACTGCAGCTGTTAACGCCATTGCTGGTCTCCTCATGTTATGGGTTCT
 TGCTTCTGGTGGTACTGCTGATAGATGCATACGTTTGGAAATACAACCACGAATACTC
 ATTTAAGTTCCATAGATACTTGCACTGCAAGTCTAGCTGGTCTAAGAACGTAAC
 GAGCTTGTAGCACACACGGATACTCTCAGAACCAAATCATTGCTGGAAATACCCAACCAT
 GTCCAAAATTGCTACTCTAACGGTCACACATACCGAGTCTTACCTTGCGGTTTACCCG
 ATGGACAGACGATTGTAACAGGAGCAGGAGATGAAACCTTAAGGTTCTGGAATGTTTCCCT
 TCCCCAAATCTCAGAACACGGATAGTGAATCGGGTCGTCTTCTTGGTAGAACACAAT
 TCGGTGAGAAGTTACTTCAAAACACAGAAAAAGTCATAAATTCTGATTCTCAGCAG
 CAGCAGCTGAGTGGTCTCAACCAACTTTTACACGGAGCAGAGAGTCATTAAA
 TTCTTTACACACGGATGCAACAAAGATCTAACCCCTTGATTTAATCACGATCTTGGTTT
 CCATCAAGATGCACAACATTCCCCAAATTTCAAAGTGTATATCTTATTCAATT
 TCTTCATATATCAAATATAGTTCTTTGTATTTACTTACGAACACAACATT
 AAATAAGCCCATGATAATAATGCAATAATTGTTACCATCTCTT

SEQ ID NO 2: *Arabidopsis thaliana* CCS52A1 protein

MEEEDPTASNVITNSNSSSMRNLSPAMNTPVVSLESRINRLINANQSQSPSPSSLRSIY SD
 RFIPSRSGSNFALFDLSPSPSKDGKEDGAGSYATLLRAAMFGPETPEKRDTITGFSSSRNI FR
 FKTEHRSLSNFSPFGVDDDSPGVSHSGPVKAPRKVPRSPYKILDLVDFRSLVSIMHETI CD
 LCDVLVSEGLEFESEVLDAPALQDDFYLNLDWSAQNVLA VGLGNCVYLWNACSSKVTKL CD
 LGAEDSVCSVGWALRGTHLAVGTSTGKVQIWDA SRCKRTTMEGHRLRVGALAWGSSVLS SG
 SRDKSILQRDIRCQEDHVS KLAGHKSEVCGLKWSYDNRELASGGNDNRLFVWNQHSTQPVLK
 YSEHTAAVKAIAWSPHVGLLASGGGTADRCIRFWNTTNTHLSSIDTC SQVCNLAWSKNVN
 ELVSTHGYSQNQIIVWKYPTMSKIATLTGHTYRVLYLA VSPDGQTIVTGAGDETLRFWNVFP
 SPKSQNTDSEIGSSFFGRTTIR

FIGURE 14

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SEQ ID NO 3: *Oryza sativa CCS52A cDNA, AKO70642*

ATCCCCAAATCTCTGCCCGACCCATGGATACCACCAACCCACCTGCCGCCGCCGC
 CGCGGTGCGCGATGGAGAACCTCGCGTCCTCCAAGCCGCCACCCGGTCCACCCCGTC
 TCGCGCCTCGCCGCCGCGCTCCCTCCCGCTCTCCCGCGCACCCCTCCCCGTC
 CTCCTCCCGCCACGCCGGCTCGCGACGGTCTACAGCGACCGCTTATCCCCAGCCGCG
 CGGATCCAACCTCGCGCTTCGAACCTGCCCGTCCGCCCACACGACGCCGCC
 GCCGCCGCTCCCCGGCGCCGCCCTCGGATCTACCCGGCTCGCCCTACTG
 CGCGCTCCTCCCGCCGCGCTCTCCGGCCACACGCCGACCGGGTGGCGTGTGGCGT
 CGCGTGTCTCCCTCCCTCCGCCGGGCGTGTGGCTCACCCGCCACCGGCAAC
 ATATTCAAGGTTCAAGGGGAGGTGCCCGGAATGCTAACGCGCCCTTTCTCGACGGGA
 CGACGAGGGCGTGTCTTCCCCGGGTGTTCAACGAGGGGACTGGCCCAGGAAGATCC
 CTAGGTACCTATAAGGTGCTGGATGCTCCCGCATTCAGGATGACTTCTACCTGAACCTT
 GTGGATTGGTCTTCGCATAATATCCTTGCAAGTGGATTGGGAATTGTGTCTACTTATGGAA
 TGCATGCAGCAGCAAGGTACCAAGCTATGTGATTGGGGTGGATGACAATGTCTGTTAG
 TGGGTTGGGACAGCGTGGCACTCACCTGCTGTAGGGACAAACCAAGGAAAGTTCAAGGTA
 TGGGATGCCACTCGTTGTAAGAGAATAAGAACCATGAAAGCCATCGGATGCGAGTAGGTGC
 TCTTGCAATGGATTACATCATTGCTTCGTCAAGGCACTGTCAGAAGAGCATCCTCACCATG
 ATATCCGTGCCAGGATGATTATATTAGTAGACTTGCTGGGCATAAATCGGAGGTCTGTGG
 CTCAAGTGGTCTTATGATAACCGTCAGCTTGCACTGGGGTAATGACAACAGACTTATGT
 ATGGAATCAACACTCGGCGCACCCGTAATGAGTATACTGAGCATACAGCAGCTGCAAAG
 CTATTGCGTGGTCACCTCATCTTCAATGGCTGCTTGCACTGGTGAGGAACATGCAGATAGA
 TGCATACGATTGGAAATACCAACAGAATATGCACTTAAATTGCGTCGACACAGGCAGTCA
 GGTCTGTAATCTGTATGGTCAAAGAATGTTAATGAGCTGTTAGCACTCATGGATATTCTC
 AAAATCAGATAATTGTTGGCGATACCAACATGTCAAAGCTGCCACATTGACAGGCCAT
 ACATATAGGGTATTATATTAGCATCTCCCCAGATGGACAGACATATAGTAACGGCCTGG
 TGATGAAACGCTCGGTTTGGAACGTGTTCCATCTCCAAGTCCCAGAGTTCTGACAGCC
 TAAGTAGCATCGGGCCACATCATTGTTAGGAGCTACATCGGTGACACTGAGATGTGGTA
 ATCTAATAACACTGGCTCATAGTCATAACACTACTGCAAGCAGAGTGTGATCATCAA
 TATCATTCCATTGTACCACTTGCACTACCAAGTTCATGAACCATCAAACCTAGCAAATT
 AGAGATAGTAGGATGCAAGAATGGTAAACTGGCTCGCAGACCTCGGAGTGGCTATTGCTG
 ATGCTGTATATATTATTGCTTGTAGGAGCGAAGATGGCAAACACTGACCACATCG
 CAATGTACCATGATAAGTTCACGGCCTCTGTTTGCTGAGTCAACTGGAGCT
 GGAGCTCTTATGTATACCAGTCTAGGGCTTAACAAACATGGCCAACTCATGATGCTCATTGC
 ATCCAAGTGGAAATATGCTAAGGAAGCTGGAGAATTCTGGTGC

SEQ ID NO 4: *Oryza sativa CCS52A protein*

MENSASSKPPTPASTPSSRLAAPSSRVSSAAPHPSPSSAPTPASRTVYSDRFIPS RAG SN
 LALFDLAPSPSHDAAAAAASPGAPPNGSTPASSPYCALLRAALFGPTTPDRVASSASA CS
 SSSSAGASPVGSPATGNIFRFKAEPVRNAKRALFSDGDDEGVLFPGVFTTRGTGPRKIPR SP
 YKVLDAPALQDDFYLNLDWSSHNI LAVGLGNCVYLWNACSSKVTKLCDLGVDNVCSVG WA
 QRGTHLAVGTNQGKVQVWDATRCKRIRTMESHRMRVGALAWNSSLSSGRDKSILHHDIA
 QDDYI SRLAGHKSEVCGLKWSYDNRQLASGGNDNRLLYVWNQHSAPVLYTEHTAAVKAI AW
 SPHLHGLLASGGTADRCIRFWNTTNMHLNCVDTGSQVCNLVWSKNVNELVSTHGYSON QI
 IVWRYPPTMSKLATLTGHTYRVLYLAISPDGQTIVTGAGDET LRFWNVFSPKSQSSDLS SI
 GATSFVRSYIR

FIGURE 14 (continued)

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**SEQ ID NO 5: Oryza sativa genomic DNA encoding CCS52B protein,
AP003298**

ATGCTAATGGGCCGGCCGCATGGCAGAGAGAGTACAACGGCTACTCGGGTGGGGGGCCCAC
 AGTCAGAGGGAGACAGCTCGTCTAGAAAAAGTAGGCGACTTGCCCCTCAACCAAAGTGA
 CCGTTGCAACCTCATCTCCGCTCCTCTTCCCTCTCGTCGTGTCGTCGGCGGC
 GCATCCAGCCTCGACGTGCCGGCGCCGGCGCCGCGCTCAACGTGCCGCCGGCGAT
 GGCGGGGGGGCTCCGCCTCGATCCCCGCCGTCGCCCTCCCCGCCCTCCTCGACGTCC
 CCAAGACGCCATCCCCCTTCAAGACCACGTACAGCGACCGCTTCATCCCCCTGCCGCTCCTCC
 TCCCGCCTCCACAACCTCGCCCTCCCGACCGCGACCGCGCTCCCCCTCCACCCAGA
 CGACGCCCCCTACTCCCGCCTCCCGCGCCGAGATCTTCGGCCGGACTCCCCCTCCCCGG
 CTCCCTCCTCCCCAACACCAACCTCTTCCGCTCAAGACCACCGACCAACCCCTGCCAAATCG
 CCCTTCGCGCCTCCGCCGCCACCGCCGCACTACGACTGCACCGCCGGCTCCGCTGA
 ATCCCTCACGCCCGCAAGCCGCCAGGAAGTCCCCAAGACCCGCACAAGGTCTGGACG
 CGCCGTCGCTGCAGGACGACTTCTACCTCAATCTTGTGACTGGTCGTCAGAACACGCTC
 GCCGTCGGCCTCGGAATTGCGTCTACCTCTGGTCGGCTCCAATTGCAAGGTACCAAGCT
 CTGCGATTGGGGCCAGGGACAGCGCTGCGCTGTGCACTGGACCCGAGAAGGCTCTATC
 TTGCCATCGGCACCAGCCTGGCGATGTCCAGATTGGGATAGCTCTCGCTGTAAACGGATT
 AGGACATGGGAGGACACCAAACACGGACTGGTGTATTAGCATGGAGCTCCGAATCTTGT
 CTCCGGTAGCAGGGACAAGAACATATTGCAAGCATCCGTGTCCTCAAGTGAATATCA
 GCAAGTTCTCAGGGCACAGATCAGAGAACATGTATGTGCATCAAGTGAAGCTTTGGT
 CAGGTCTGTGGACTGAAATGGTCGACGACGACCGTGAGCTTGCATCCGGTGGAAATGATAA
 TCAGCTGCTAGTATGAAACCAACGTTCGCAGCAGCCGATATTGAGGCTGACAGAACACAG
 CTGCAAGTAAAGCAATAGCATGGTCACCATCAGCAAGGCCTCTGGCATCAGGTGG
 ACCGCTGATAGGTGTATCAGGTTCTGGAACACGGTTAATGGAAACATGCTGAATTCA
 GAGCAGCCAGGCAGTGTGAGCACTCATGGTATTCCAAAACAAATCATGGTGTGG
 AAGTACCCATCTATGTCAAAGGTTGCTACTCTAACTGGACACACGCTGCGAGTGC
 TGCAATGTCACCACAATAGTAACAGGAGCCGGGATGAAACCCCTCAGATTGG
 TCCTCAATGAAGACACAGGTAGGCATATTGTTGA

SEQ ID NO 6: Oryza sativa CCS52B protein, BAB98864

MLMGRPAWQREYNGYSGGGPTVRGRQLVLEKVGDLPTPTKVTVATSSPLLFLVVVVVGG
 ASSLDVPAAPAPPRLNVPAMAGGLRLDPAVASPARLLDVPKTPSPSKTTYSDRFI PCRSS
 SRLHNFALLDRDRASPSSTTDDAPYSRLLRAEIFGPDSPSPAPSSPNTNLFRFKTDHPSPKS
 PFAASAAAATAGHYDCTAGSAESSTPRKPPRKVPKTPHKVLDAPS LQDDFYLNLDWSSQNTL
 AVG LGNCVYLWSASNCKVTKLCDLGPRDSVC AVHWTREGSYLAIGTSLGDVQIWDSSRCKRI
 RNMGGHQTRGVLAWSRSLILSSGSRDKN ILQHDIRVPSDYISKFSGHRSENHVCASSDSFFG
 QVCGLKWSHDRELASGNDNQLL VWNQRSQQPILRLEHTAAVKAIAWSPHQOGLLASGGG
 TADRCIRFWNTVNGNMLNSVDTGSQATCEHSWVFPKPNNHGVEVPIYVKGCYSNWTHAASALP
 CNVTTIVTGAGDETLRFWNIFPSMKTQVGIYC

SEQ ID NO 7: consensus motif 1 of CCS52 protein

X\$XXXXFDL

FIGURE 14 (continued)

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SEQ ID NO 8: consensus motif 2 of CCS52 protein

XXXXXXYXXLLXXXXFG

SEQ ID NO 9: consensus motif 3 of CCS52 protein

XXXXNXXRFKX_(2 or 4)RXX

SEQ ID NO 10: consensus motif 4 of CCS52 protein

SKVTKL

SEQ ID NO 11: consensus motif 5 of CCS52 protein

DXXSXGXGHKS

SEQ ID NO 12: consensus motif 6 of CCS52 protein

HSXXXPXLXXXEH

SEQ ID NO 13: consensus motif 7 of CCS52 protein

WNNTTXXXXLXXXDT

SEQ ID NO 14: consensus motif 8 of CCS52 protein

LYLAXSPDGQTIVT

SEQ ID NO 15: consensus motif 9 of CCS52 protein

XXGXXXXXXXXXIR

SEQ ID NO 16: consensus C box

DRFIPXR

SEQ ID NO 17: consensus motif 1 of CCS52A proteins

GSN(F/L)ALFD(L/I)

SEQ ID NO 18: prm03191

GGGGACAAGTTGTACAAAAAAGCAGGCTTCACAATGGAAGAAGATCCTACAGC

SEQ ID NO 19: prm01392

GGGGACCACTTGTACAAGAAAGCTGGGTTCTCACCGAATTGTTGTTCTAC

FIGURE 14 (continued)

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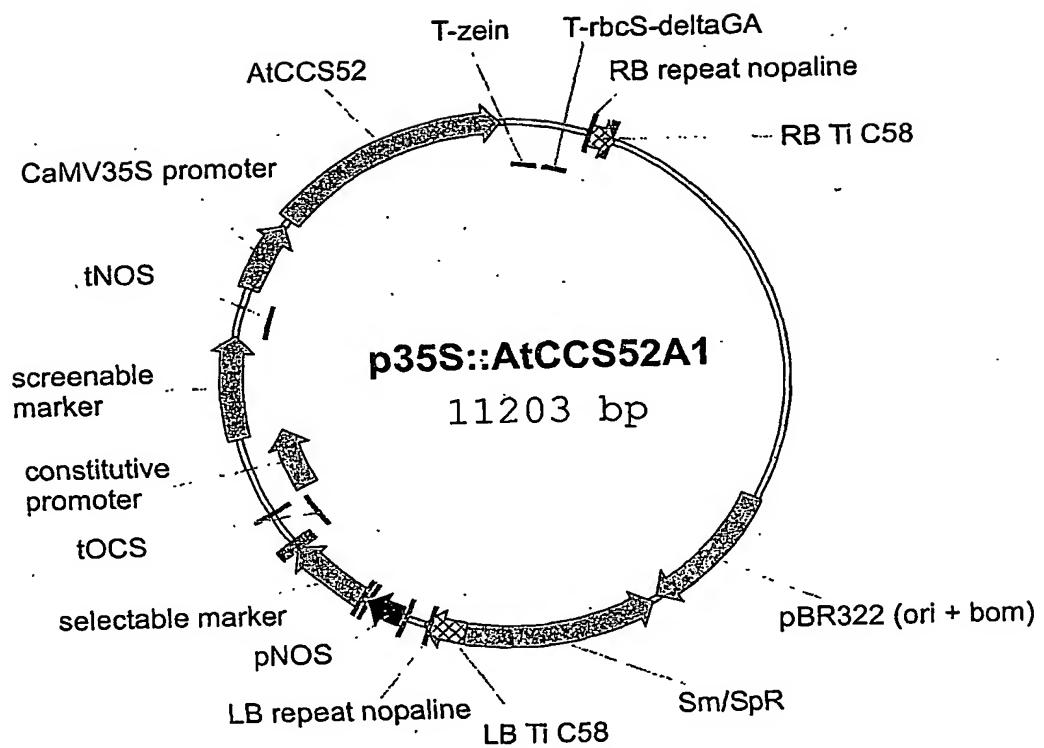


FIGURE 15

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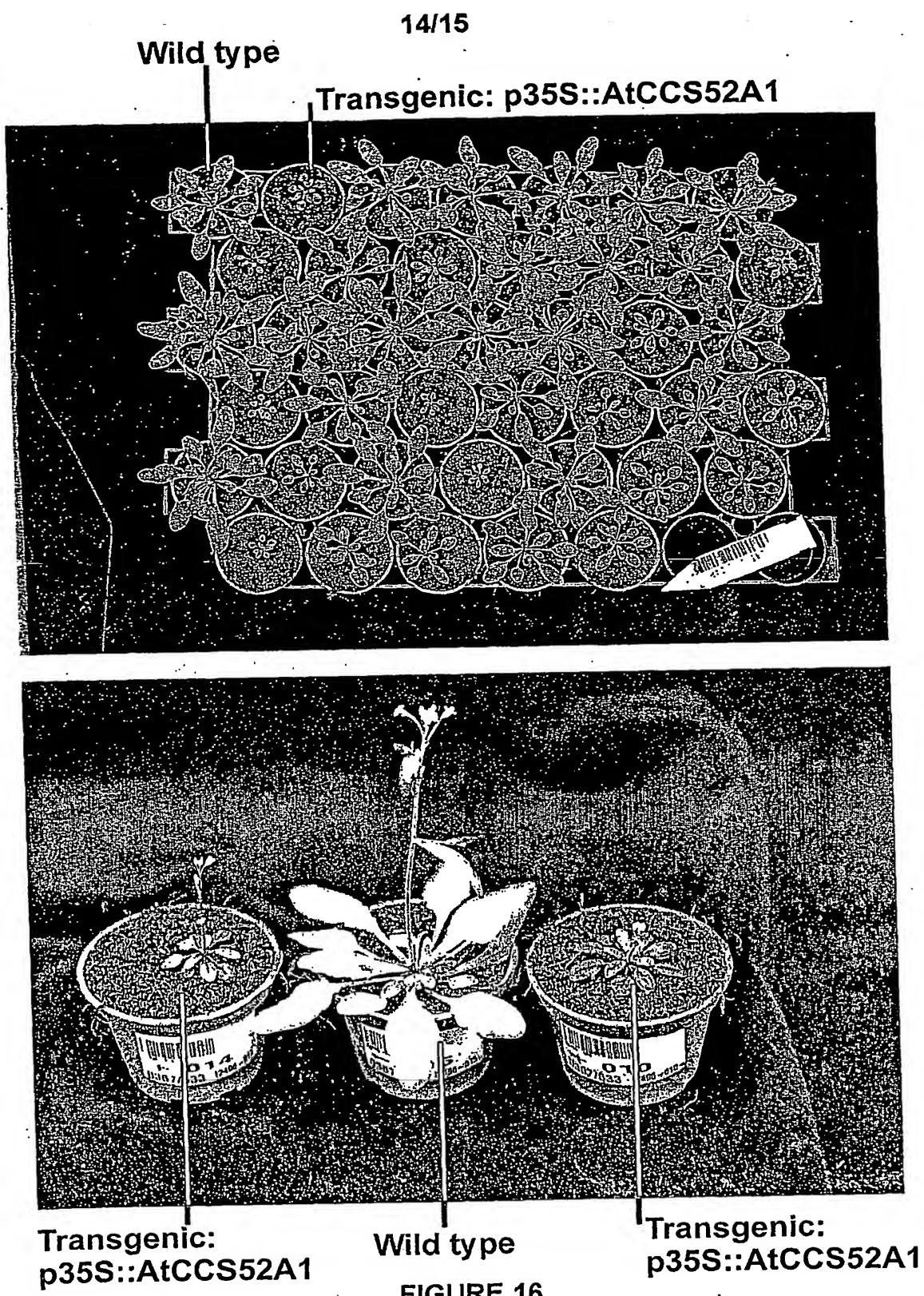


FIGURE 16

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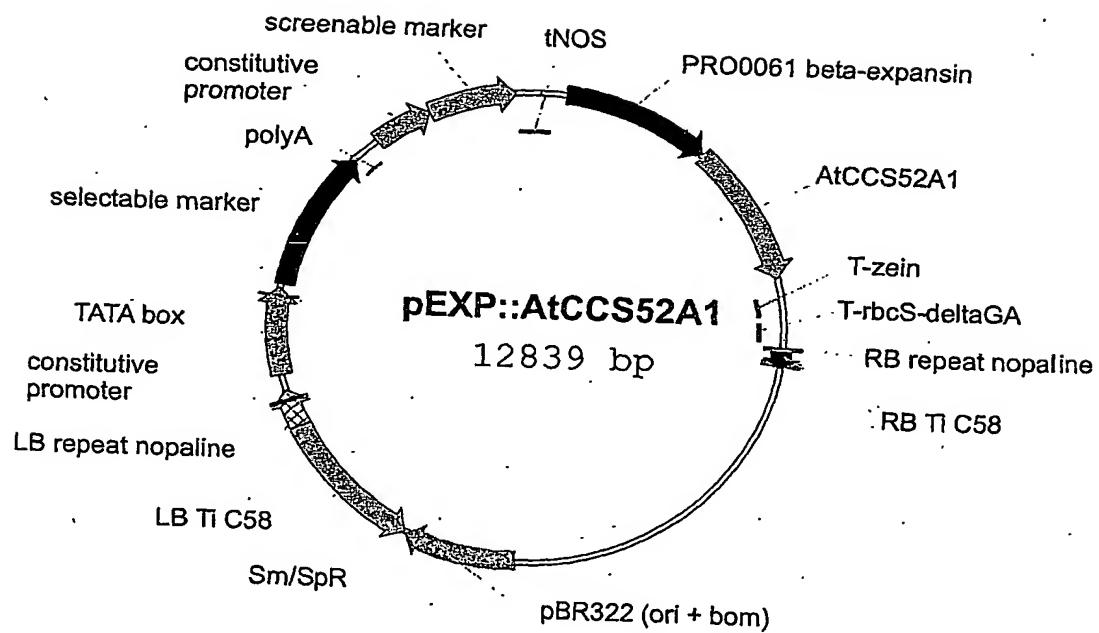


FIGURE 17